IN THE SPECIFICATION

Please amend the specification, to read as follows:

1. Please amend paragraph [0001], to read as follows:

This application makes reference to, incorporates the same herein, and claims all ~~right~~ rights accruing from our earlier filing of a provisional patent application entitled *Electronic Cam Assembly* filed in the United States Patent & Trademark Office on the 6th day of June 1997 and there assigned Serial No. 60/050,941, and our patent application entitled *ELECTRONIC CAM ASSEMBLY* filed in the United States ~~patent~~ Patent & Trademark Office on the 5th day of June 1998 and there assigned Serial No. 09/092,080, now issued on the 3rd of April 2001 as U.S. Patent No. 6,209,367.

2. Please amend paragraph [0004], to read as follows:

Four major lock manufacturers currently continue to produce locks with offset keyed cylinders, while at least two other ~~manufacturer~~ manufacturers that have discontinued production, continue to have a large installed base. One of the most popular offset locks in the current market is the 4440 series left hand and right hand model manufactured by Sargent And Greenleaf. We have noticed a need to retrofit existing offset keyed cylinder locks with electro-mechanical locks, without expensive and inconvenient replacement of the doors, in order to minimize the man hours consumed

by employees of banks that provide attendance to the customers, while the customers open their safe deposit doors, with a mechanical enhancement of blocking strength as well as an improvement of security over other processes, without a complex electrical contact system.

3. Please amend paragraph [0008], to read as follows:

Generally, we have noticed that many of these locks remain susceptible to mechanical tampering. By way of example, we have the tolerances of some of these locks have a configuration that translates a force that is externally applied to the casing of the lock to translate that force into an inertia that causes a locking component such as a pin, latching mechanism, detent or sidebar to travel in the opposite direction from its locked position, and to be temporarily disengaged from whatever groove, recess or slot it occupied prior to application of the force. This allows a torque that was contemporaneously applied to the lock to operate the lock, such as by rotating the cylinder plug ~~with~~ within the shell of the cylinder.

4. Please amend paragraph [0018], to read as follows:

It is ~~a~~ still an additional object to provide an electronic cam and cam locking process endowed with simplified interconnections between the components of the lock, and that is amenable to simplified manufacture.

5. Please amend paragraph [0019], to read as follows:

It is ~~a~~ yet an additional object to provide an electronic cam and cam locking process endowed with an enhanced mechanical strength.

6. Please amend paragraph [0022], to read as follows:

These and other objects may be achieved with a process and a lock for securing access to the interior of a volume. The lock may be constructed with a housing bearing an interior recess containing a pair of axially aligned and spaced apart detents. A locking mechanism is removably inserted within the recess. The locking mechanism may be constructed with a single annularly wound coil of insulated wire to form a circular cylinder surrounding a central axially oriented bore, with the wire terminated by a single pair of leads. The bore perforates axially opposite base ends of the coil. A pair of armatures made of a material that is movably responsive to magnetic force, each exhibit a distal end. The armatures are both ~~being~~ slidably positioned at axially opposite ends of the bore, in coaxially aligned axial opposition. One or more springs are coaxially aligned with the ~~the~~ armatures, to bias both armatures to extend their distal ends axially outwardly beyond axially opposite base ends of the coil.

7. Please amend paragraph [0033], to read as follows:

Fig. 8 illustrates the ~~fact~~ effect of inertial force applied in the direction opposite to that shown in Fig. 7, to a double armature solenoid constructed with no barrier between armatures;

8. Please amend paragraph [0045], to read as follows:

Fig. 20 illustrates a ~~plane~~ plan view of an alternative embodiment of the present invention;

9. Please amend paragraph [0048], to read as follows:

Turning now to the drawings and specifically to Figs. 1 and 2, solenoid 120 may be used in a cam lock, for example, to block movement of a bolt of the lock from an extended position in which rotation of the cam is blocked, to ~~an retracting~~ a retracted position in which the bolt is withdrawn and the rotation of the cam is accommodated. In such construction, solenoid 120 would block operation of the lock with oppositely extending coaxially positioned armatures 124 that are coaxially aligned along the central axis formed by a single winding of coil 122. Coil 122 may be constructed from a single length of insulated, electrically conducting wire that is circularly wound in multiple turns to form a circular cylinder ~~having~~ providing a central, axial bore 130 that extends the axial length of coil 122 and perforates opposite base ends of coil 122. A spring 126 may be positioned within the axial bore 130 between the adjacent proximal ends of armature 124. Spring 126 biases

armature 124 to extend axially outwardly beyond the casing 132 surrounding winding 122. A pair of electrical leads 128 conduct direct current to opposite ends of the coil formed by winding 122.

10. Please amend paragraph [0054], to read as follows:

The dual armature solenoid 120 shown in Figs. 7 and 8 responds to application of an externally generated force to casing 130 by allowing the inertial force I to force both armatures 124 in the direction ~~of~~ opposite to force F; consequently, one armature 124 is directed inwardly to a partially retracted position while spring 126 responds to the axial motion of that armature by forcing the opposite armature 124 to extend outwardly, as shown in Figs. 7 and 8. This assures that the distal end of one of two armatures 124 extends ~~radially and outwardly~~ axially outward. If solenoid 120 is incorporated into a cam lock, or other locking mechanism, application of an unauthorized force N will, at best cause a partial retraction of only one of two armatures 124, will simultaneously force the axially opposite armature 124 to be displaced more ~~secularly~~ securely into its conforming detent to prevent an unauthorized opening of the lock such as by obstructing the rotation of a cylinder plug within the shell of the lock.

11. Please amend paragraph [0055], to read as follows:

Fig. ~~10~~ 9 shows a single armature solenoid 102 equipped with an external spring 146 coaxially ~~wind~~ wound around the distal portion of armature 124. A detent 148 prevents spring 146

from escaping from the distal end of armature 124, and holds spring 146 in place between detent 148 and the base of central bore 130. With this arrangement however, armature 124 is exposed to the same deficiency when external forces are applied to casing 132, as is the embodiment shown in Fig. 6 with an internal spring 126.

12. Please amend paragraph [0056], to read as follows:

The embodiment illustrated in Figs. 10 and 11 however, may be constructed with a pair of external springs 146 coaxially mounted around armatures 124. The embodiment illustrated in Fig. 11 includes an air vent ~~150~~ 152 extending from the central portion 150 of axial bore 130, through coil 122 ~~and~~ that opens to the atmosphere at an orifice in the circumferential exterior surface of cylinder coil casing 132. This enables armatures 124 to have a much closer exterior cylinder coil that conforms to the interior cylinder coil surfaces of axial bore 130, because air compressed within the central portion 150 by energization of coil 122 and subsequent retraction of armatures 124 will be not impeded by any increase in pressure ~~of their~~ due to air trapped within central portion 150. The closer tolerance between cross-sectional dimensions of bore 130 and armature 124 will minimize blow-by, that is ~~accommodated~~ ameliorated by escape of the trapped air via vent 152.

13. Please amend paragraph [0057], to read as follows:

Figs 12 and 13 illustrate that application of externally generated force F to casing 132 of

solenoid 120 will result in an ~~oppositely~~ axially directed inertial force I that will subsequently cause a tendency of one armature 124 to ~~retract~~ recede against its surrounding ~~by~~ spring 146, while the inertial force will force other armature 124 to extend by traveling in the same direction. Vent 152 may be sized to regulate air flow from within central portion 150.

14. Please amend paragraph [0058], to read as follows:

Fig. 15 shows an alternative embodiment of solenoid 120 constructed with external springs 146 mounted coaxially around armatures 124. A check valve 154 equipped with a floating ~~bore~~ ball 156 on one of two vents 152 will allow the inertial force I applied to one of armatures 124 in response to an unauthorized application of a force F to casing 132 to restrict outflow of air from inertial portion 150 with the trapped air being instead applied, together with inertial force I, to force the opposite armature 124 to extend outwardly. In fact, the opposite armature is ~~mostly~~ most likely nearly extended to its maximum stroke; the inertial force will therefore, simply maintain the extended armature within its conforming slot and prevent operation of the lock despite the application of force F. Check valve 154 will prevent the occurrence of a negative vacuum when the effect of force F is ~~intense~~ attenuated.

15. Please amend paragraph [0059], to read as follows:

Figs. 17 and 18 show alterative embodiments incorporating solenoid 140 within the cylinder

plug 160 of a lock. Cylinder plug 160 is coaxially inserted into the central bore 164 of the shell 144 of the lock. As shown in Fig. 7, when solenoid 120 is in an energized state, armatures 124 are forced radially outwardly by spring 126 to engage conforming slots 168 cut into the inertial circumferential surfaces of bore 134. When a potential difference is applied across leads 128 of coil 122 however, the resulting magnet field creates oppositely directed forces G, G' that draw the distal ends of armature 124 radially inwardly, thereby withdrawing the distal ends of armature 124 from slots 168, ~~thereby~~ and thus allowing cylinder plug 160 to rotate, either clockwise or counter clockwise (depending upon the construction of the lock) relative to shell 166.

16. Please amend paragraph [0061], to read as follows:

Figs 20, 21 and 22 show a lock equipped with a solenoid 120 fitted into a drawer 180. Solenoid 120 may be mounted within a bracket 184 against rear vertical wall 182 of ~~the cash registrar's~~ drawer 180, on the inside of the drawer. Electrical leads 128 to ~~circular~~ circularly wound coil 122 may be supported by bracket 184. The distal base ends of armatures 124 are beveled to form camming surfaces 125. A second bracket 186 mounted ~~where~~ on the vertical wall of ~~the~~ cash ~~registrar's~~ register drawer 180 is perforated by axially opposite apertures 188 that are sized to receive the beveled distal ends 125 of ~~armature 24~~ armatures 124. Consequently, when drawer 180 is forced to the rear in the direction of arrow F, bracket 186 engages ~~distal~~ beveled ends 125 of armatures 124 and forces the distal ends of armatures 124 away from bracket 184, as shown in Fig. 20, until the extreme distal tips of armatures 124 engage the interior walls of bracket 184. Farther travel to the

rear in the direction of ~~arrow~~ force F as shown in Fig. 21 and subsequently in Fig. 22, will force the distal ends of apertures 124 within aperture 188 under the force applied by spring 126, thereby locking drawer 180 against rear wall 182. The ~~present~~ presence of the circumferential surfaces 127 of distal ends of armatures 124 against the rear walls of apertures 188 will ~~present the cash register's~~ prevent drawer 180 from being opened, even minutely.

17. Please amend paragraph [0062], to read as follows:

Subsequent application of a potential difference across leads 128 will cause current to flow through coil 122, thereby electrically creating ~~an electro-magnetic~~ a magnetic field that will generate oppositely directed forces that retract armatures 124 axially into the center 150 of axial bore 130 surrounded by coil 122. This will withdraw the distal ends of armatures 124 from apertures 188 and ~~enable~~ contemporaneously allow drawer180 to be drawn outwardly with bracket 186 removed from between end walls 184, thereby allowing drawer 180 to remain open once the potential difference has been removed from across leads 128.

18. Please amend paragraph [0063], to read as follows:

It may be ~~seem~~ seen from the foregoing paragraphs that the embodiments of the present invention provide an electromechanical release mechanism that protects the security provided by a lock equipped with a solenoid from deliberate application of external force applied to the lock in an

effort to dislodge ~~the armature~~ armatures 124 from engaging their corresponding slots 188 within the lock. The dimensions of the solenoid ~~are~~ is quite small, thereby enabling the solenoid to be incorporated within the cylinder ~~plug~~ plugs of locks equipped with mechanical pin tumblers. The dimensions of the solenoid also enables the solenoid to be mounted to accommodate both radial and, in different embodiments, axial movement of the armatures relative to the housing, or shell of the lock.

19. Please amend paragraph [0064], to read as follows:

Locks equipped with a dual armature solenoid may be employed as components of a system that uses a process for programming (*i.e.*, in some instances a computer terminal), an optional key programming station, an electronic key, and an electronic cam. Generally, the foregoing paragraphs describe a lock that may be constructed with a housing bearing a hole centered upon a first axis, a bolt supported by the housing and moving transversely relative to the first axis to protrude beyond the housing to an extended position and to retract within the housing to a retracted position, a cylinder plug perforated by a keyway, having an exposed circumferential surface surrounding the keyway rotatably fitted within the hole, and rotating within the hole in response to rotational force applied by a key conformingly corresponding to the lock through an arc centered upon the first axis, a cam positioned to rotate with the cylinder plug as the key conformingly corresponding to the lock manually applies a rotational force to the cylinder plug rotates through a arc, a member eccentrically positioned relative to the axis, extending between the cam and the bolt to drive the bolt between the

extended and the retracted positions as the cylinder plug turns through the arc, an electronic circuit containing a memory and a microprocessor, mounted upon and supported by the cam to rotate with the cam through the arc, the electronic circuit operationally responding to digital data carried by the key conformingly corresponding to the lock when the microprocessor determines that the digital data conformingly corresponds to resident data stored within the memory, a release spaced-apart from the cylinder and eccentrically positioned away from the first axis, the release being functionally activated by the electronic circuit to move between a deployed position preventing rotation of the cam relative to the housing, and a released position accommodating the rotation of the cam relative to the housing of the lock. By electrically energizing a release mechanism that is spaced-apart from the axis of rotation of the cylinder plug, the magnetic field created by the coil within its bore draws the armatures in opposite directions toward the centroid of the bore; consequently, both armatures move between a deployed position preventing rotation of the cam or cylinder plug of the lock relative to the housing, and a released position accommodating the rotation of the cam or the cylinder plug relative to the housing. It may be appreciated therefore, that embodiments of mechanisms equipped the foregoing solenoids may be used to retrofit locks that are already installed, typically by simply replacing a single component of the lock.